

SUBSTITUTE ABSTRACT

Data to be sent are, in a data communication unit, first divided into electric signal packets by a data transmission/receipt control unit, whereby an electric signal sequence tag is added to each electric signal packet, then converted into optical packets by an optical signal transmitting unit, and transmitted through an optical signal path. At optical switch, the optical paths of the packets are switched to optical signal paths by the actions of optical destination tags that are respectively synchronized with optical packets and irradiated by an optical signal transmitting unit. At optical signal receiving units, the received optical packets are converted to electric signal packets, and reassembled to be original data according to the identification information on the reassembly sequence recorded in the sequence tag in an electric signal packet by data transmission/receipt control units, and distributed to client devices as electric signals.